CLAIMS:

1. A method for sending a notice of failure detection in a system connecting first and second network interfaces incorporated in first and second apparatuses by a line including a transmission side transfer path and a reception side transfer path, wherein:

said first and second network interfaces periodically transmit a utilizability signal representing the failure of said line or an own apparatus to said transmission side transfer line; and

said first apparatus judges an occurrence of a failure when it cannot detect said utilizability signal from said second network interface of said second apparatus as a mating apparatus for a predetermined period from said reception side transfer path, and said first network interface of said first apparatus stops transmitting said utilizability signal to be transmitted to said second network interface of said second apparatus and thus reporting the occurrence of the failure to said second apparatus.

2. A method for sending a notice of failure detection according to claim 1, wherein:

when staid first network interface of said first apparatus stops transmitting said utilizability signal, said first apparatus starts transmitting periodically said utilizability signal to said reception side transfer path after the passage of a predetermined period, monitors thereafter whether or not said utilizability signal can be detected on said reception side transfer path, judges that

the failure is not yet restored when said first apparatus cannot detect said utilizability signal for the predetermined period on said reception side transfer path, and stops again transmitting said utilizability signal that has been transmitted periodically to said transmission side transfer path; and

when said first apparatus can detect continuously said utilizability signal on said reception side transfer path for a predetermined period, on the other hand, said first apparatus judges that the failure is restored, continues thereafter to transmit periodically said utilizability signal, and starts again the data communication.

3. A method for sending a notice of failure detection according to claim 1, wherein:

at least one of said first and second apparatuses includes a plurality of network interfaces as a group, and stops transmitting said utilizability signal from all of said network interfaces inside said group when the failure occurs in one of said network interfaces inside said group or in said reception side transfer path connected to said network interface, and said utilizability signal cannot be detected from said reception side transfer path.

4. A method for sending a notice of failure detection according to claim 2, wherein:

at least one of said first and second apparatuses includes a plurality of network interfaces as a group, and stops transmitting said utilizability signal from all of said network interfaces inside said group when the failure

occurs in one of said network interfaces or in said reception side transfer line connected to said network interface, and said utilizability signal cannot be detected from said reception side transfer path.

5. A method for sending a notice of failure detection according to claim 1, wherein:

when said first apparatus cannot receive said utilizability signal of said transfer path on said reception side transfer path for receiving data from said network interfaces of said second apparatus for the predetermined time and judges that the failure occurs, said first apparatus intentionally stops transmitting said utilizability signal that has been transmitted periodically to said transfer path for transmitting the data to said interfaces of said second apparatus;

said first apparatus starts transmitting periodically said utilizability signal to said transmission side transfer path after the passage of the predetermined time, and thereafter monitors whether or not said utilizability signal can be detected on said reception side transfer path;

when said utilizability signal cannot be detected on said reception side transfer path for the predetermined time, said first apparatus judges that the failure is not restored, stops again intentionally transmitting said utilizability signal that has been transmitted periodically to said transmission side transfer path, starts again transmitting periodically said utilizability signal to said

transmission side transfer path after the passage of the predetermined time, and repeats the monitor processing of said reception side transfer path until said utilizability signal can be detected on said reception side transfer path; and

when said utilizability signal can be detected continuously on said reception side transfer path for the predetermined time, said first apparatus judges that the failure is restored, keeps thereafter periodical transmission of said utilizability signal, and starts again the data communication.

6. A method for sending a notice of failure detection according to claim 1, wherein the data communication is stopped simultaneously with the stop of transmission of said utilizability signal of said transfer path.

7. A method for sending a notice of failure detection according to claim 2, wherein the data communication is started again simultaneously with restart of transmission of said utilizability signal of said transfer path.

8. A network interface in a system connecting two network interfaces incorporated in two apparatuses, respectively, by a line including a transmission side transfer path and a reception side transfer path, comprising:

a transmission control portion for periodically transmitting a utilizability signal representing a failure of said line or said apparatus associated with said line to said transmission side transfer path from said network interface to the other of said network interfaces; and

a line control portion for stopping transmission of said utilizability signal to be transmitted to said interface, to said transmission control portion by judging that a failure occurs when a reception control portion cannot detect said utilizability signal from the other of said interfaces from said reception side transfer path for a predetermined time.

9. A network interface according to claim 8, wherein at least said line control portion is produced into a one-chip semiconductor integrated circuit.

10. A network apparatus in a network system having one or more network interfaces incorporated in two apparatuses and connected by a line including a transmission side transfer path and a reception side transfer path electrically isolated from one another, wherein:

said network interfaces are classified into groups, at least one of said network interfaces belongs to each of said groups, and a network interface is allowed to belong to a plurality of said groups; and

each of said network interfaces includes means for stopping transmission of a utilizability signal to be transmitted to said transmission side transfer path when a failure is judged as occurring in said reception side transfer path, and means for stopping transmission of said utilizability signal to said transmission transfer path in all of said network interfaces belonging to the same group as said network interface when the failure is detected in at least one network interface belonging to a group

associated with its own network interface.

11. A network apparatus according to claim 10, wherein each of said network interfaces includes means for continuing transmission of said utilizability signal to said transmission side transfer path and starting again simultaneously data communication when the failure of said reception side transfer path is judged as being restored, and means for starting transmission of said utilizability signal to said transmission side transfer line in all of said network interfaces belonging to the same group as said interface when failure restoration is detected after the passage of a predetermined time from the failure detection.

12. A network system having redundant routes of a plurality of systems constituted by using said network apparatus according to claim 10, for cutting off reliably and at a high speed a failure occurrence portion and assisting switching of said redundant routes at the time of occurrence of the failure by setting groups in accordance with a switching unit at the time of the occurrence of the failure.